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EXAMINER RUSSELL, WANDA Z				
ART UNIT		PAPER NUMBER		
2616				
NOTIFICATION DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/690,015

Applicant(s)

BERTHAUD ET AL.

Examiner

WANDA Z. RUSSELL

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 7-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-946)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- Paper No(s)/Mail Date _____

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/21/2008 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-4, and 7-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Klinker et al. (U.S. Patent 7,133,365 B2).

For **claim 1**, Klinker et al. teach a method for routing a datagram (method facilitates controlling routing of data, refer to col. 2, line 51) in an IP network (refer to Fig. 1C and IP, col. 5, line 60), said method comprising the steps of:

receiving a datagram with a destination network address (The path selection process is vendor-specific and generally relies on known source and destination IP addresses, refer to col. 6, lines 41-43);

identifying (selection, col. 6, line 41) a next hop router path (different path, refer to col. 6, line 45) en route to or associated with said destination network address (The path selection process relies on known source and destination IP addresses, refer to col. 6, lines 43-45); and

determining (determine, refer to col. 20, line 50) whether or not transmission of said datagram on a link to said next hop router would result in a bandwidth usage exceeding a bandwidth threshold (utilization alarm threshold, col. 20, line 31) associated with said next hop router (Fig. 12, and next-hop, refer to col. 20, lines 25-26), and

if not, updating (reconstruct, refer to col. 20, line 53) the bandwidth usage associated with said next hop router, and transmitting said datagram to said next hop router (to routers, refer to Fig. 12),

if so, selecting among other possible next hop routers en route to or associated with said destination address, another next hop router for which transmission of said datagram on a link to said other next hop router would not result in a bandwidth usage exceeding a bandwidth threshold associated with said other next hop router, updating the bandwidth usage associated with said other next hop router, and transmitting said datagram to said other next hop router (determine an alternate route based ... on a router's free bandwidth, refer to col. 21, lines 8-9),

wherein the bandwidth usage is a dynamic parameter which is updated in a forwarding information database (FIB) in real-time (Referring back to Fig. 2, configuration element 211 is coupled to controller 205 and data director 220. Controller 205 provides the best route to reach a destination prefix to configuration element 211.

Configuration element 211 operates to change the default routing behavior (i.e., current path) for the destination requiring corrective action. Configuration element 211 changes the routing behavior by, for example, sending a modified routing table of addresses to data director 220, refer to col. 21, lines 11-26, and Fig. 2).

However, Klinker et al. fail to specifically teach if so, selecting among other possible next hop routers en route to or associated with said destination address.

Nevertheless, from Fig. 2, NSP 1 to NSP n of Klinker, and the “determine an alternate route based ... on a router’s free bandwidth” (refer to col. 21, lines 8-9), it can be seen that the determination is based on a selecting among other possible next hop routers en route, and it is obvious that routing is associated with the destination address.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Klinker et al. to choose the optimum route.

For **claim 2**, Klinker et al. teach the method as set forth in claim 1, wherein the step of selecting comprises the steps of:

if, among said other possible next hop routers, there is no other next hop router for which the transmission of the datagram on the respective link would result in the bandwidth usage being less than the respective bandwidth threshold, choosing among said other possible next hop routers, another next hop router (determine an alternate route based ... on a router’s free bandwidth, refer to col. 21, lines 8-9), updating the bandwidth threshold associated with said other (reconstruct ... threshold, refer to col. 20, line 21, lines 21-23, and line 31), chosen next hop router with a larger, predefined

bandwidth threshold (in accordance with the flow policy, refer to col. 21, line 10. Policy implies bandwidth threshold. Also refer to threshold, col. 20, line 31); and transmitting the datagram to said other, chosen next hop router (to routers, refer to Fig. 12).

However, Klinker et al. fail to specifically teach if, among said other possible next hop routers, there is no other next hop router for which the transmission of the datagram on the respective link would result in the bandwidth usage being less than the respective bandwidth threshold.

Nevertheless, the "minimum bandwidth commitment" (refer to col. 20, lines 29-30) is interpreted as this feature.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Klinker et al. to choose the optimum route.

For **claim 3**, Klinker et al. fail to specifically teach the method as set forth in claim 1 wherein the step of determining, comprises the step of adding a bandwidth usage associated with said next hop router immediately before transmission of said datagram on said link to said next hop router to a bandwidth usage required for transmission of said datagram on said link to said next hop router, and comparing a result of said adding step to the bandwidth threshold associated with said next hop router.

Nevertheless, the "Usage collector 1215 accepts provider configuration information 1271 related to each NSP connection, ... next-hop ... bandwidth" (refer to col. 20, lines 22-23, and line 26 & 28) is interpreted as adding a bandwidth usage associated with said next hop router immediately before transmission of said datagram on said link to said next hop router to a bandwidth usage required for transmission of

said datagram on said link to said next hop router; and "this NSP configuration information details provider interfaces on the various routers, ... next-hop ... circuit bandwidth for calculating the utilization ... threshold" (refer to col. 20, lines 24-31) is interpreted as comparing a result of said adding step to the bandwidth threshold associated with said next hop router.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Klinker et al. to keep a clear utilization record for the next hop router.

For **claim 4**, Klinker et al. teach the method as set forth in claim 1 wherein the step of updating the bandwidth usage associated with the first said next hop router, comprises the step of updating in a table, the current bandwidth usage with the estimated bandwidth usage (byte counters, refer to col. 20, line 16 & lines 13-20).

However, Klinker et al. fail to specifically teach updating in a table.

Nevertheless, the "byte counters," (refer to col. 20, line 16 & lines 13-20) is a table.

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Klinker et al. for updating the record with complete details.

For **claim 7**, Klinker et al. teach the method as set forth in claim 2, wherein the step of choosing among said other possible next hop routers, comprises the step of choosing among said other possible next hop routers, a next hop router according to a shortest path algorithm (shortest path, refer to col. 34, line 51).

For **claim 8**, Klinker et al. teach the method as set forth in claim 1, wherein a bandwidth usage of a link to said next hop router is based on other datagrams that have been transmitted on said link within a time period prior to a current time (FIG. 14 illustrates how the availability of "free" bandwidth is expressed for a given provider and is measured by usage collector 214 of FIG. 2. Over any given time period from t_0 through t_1 , current usage rate 1602 ... determined, refer to col. 26, lines 18-22).

For **claim 9 and 12**, they are means claims (refer to 200 in Fig. 2) corresponding to method claim 1 and 2, therefore they are rejected for the same reason above.

For **claim 10 and 11**, they are computer program product claims corresponding to method claim 1 and 2, therefore they are rejected for the same reason above.

For **claim 13**, Klinker et al. teach the method as set forth in claim 1, further comprising sending an IP datagram with an updated header to a selected next hop router (changing to an alternate route, as described by col. 21, lines 8-9 for claim 1, means updating the source and destination port numbers in the header, refer to col. 17, lines 8-9) and defining a current bandwidth for billing as an increasing function (next-hop ... circuit bandwidth for calculating the utilization, refer to col. 20, lines 26-29).

For **claim 14**, Klinker et al. teach the method as set forth in claim 1, further comprising, at a beginning of a billing period, defining a current bandwidth threshold equal to a lowest value in a list of bandwidth thresholds (billing period ... minimum bandwidth commitment ... a utilization ... threshold, refer to col. 20, lines 27-32).

For **claim 15**, Klinker et al. teach the method as set forth in claim 1, further comprising, for each link to a next hop router (NSP 1 to NSP n in Fig. 2), adding a

minimum time to emit a next datagram (utilizing a minimum time to emit a next datagram is a well-known step. The examiner applies U.S. Patent 3,783,258 as an evidence: "minimum time between data sets ...", refer to col. 5, line 15), a list of bandwidth thresholds (several absolute thresholds, refer to col. 24, line 13), a current bandwidth threshold (utilization alarm threshold, refer to col. 20, line 31), and a billing period (billing period, refer to col. 20, line 27) in the FIB (refer to col. 20, lines 21-32).

For **claim 16**, Klinker et al. teach the method as set forth in claim 1, further comprising, for each link to a next hop router (NSP 1 to NSP n in Fig. 2), utilizing a current bandwidth for billing (next-hop ... billing ... circuit bandwidth for calculating the utilization, refer to col. 20, lines 26-29), a list of bandwidth thresholds (several absolute thresholds, refer to col. 24, line 13), a current bandwidth threshold (utilization alarm threshold, refer to col. 20, line 31), and a billing period to route traffic (billing period, refer to col. 20, line 27).

For **claims 17-19**, they are corresponding to claims 13, 15 and 16 respectively, therefore they are rejected for the same reason above.

For **claims 20-22**, they are corresponding to claims 14, 15 and 16 respectively, therefore they are rejected for the same reason above.

Response to Arguments

4. Applicant's arguments, filed 7/21/2008 have been fully considered but they are not persuasive.

5. Applicant argues that Klinker makes the determination of transmission of the datagram for a given service provider and not one that is based on the bandwidth usage of the link to the next hop router for claims 1, 9, and 10.

In response, the Examiner respectfully disagrees.

In col. 21, lines 8-9, Klinker teaches "determine an alternate route based in part on a route's free bandwidth", and refer to Fig. 12, router 1272 & NSP 1-N, they are next hops to choose from.

6. Applicant argues that the bandwidth usage is a dynamic parameter which is updated in a forwarding information database (FIB) in real-time as amended claims 1, 9, and 10, and Klinker does not teach this feature.

In response, the Examiner respectfully disagrees.

Klinker teaches wherein the bandwidth usage is a dynamic parameter which is updated in a forwarding information database (FIB) in real-time (Referring back to FIG. 2, configuration element 211 is coupled to controller 205 and data director 220. Controller 205 provides the best route to reach a destination prefix to configuration element 211. Configuration element 211 operates to change the default routing behavior (i.e., current path) for the destination requiring corrective action. Configuration element 211 changes the routing behavior by, for example, sending a modified routing table of addresses to data director 220, refer to col. 21, lines 11-26, and Fig. 2).

7. Arguments regarding dependant claims are repetition of the arguments filed on 6/4/2008, and were responded in the advisory action. The Rejections of dependant claims remain effective.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WANDA Z. RUSSELL whose telephone number is (571)270-1796. The examiner can normally be reached on Monday-Thursday 9:00-6:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (571) 272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wanda Z Russell/
Examiner, Art Unit 2616

/Brenda Pham/

Primary Examiner, Art Unit 2616